

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2021-0653; Project Identifier AD-2021-00170-R; Amendment 39-21784; AD 2021-22-11]**

**RIN 2120-AA64**

#### **Airworthiness Directives; MD Helicopters Inc. (MDHI) Helicopters**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

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**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain MD Helicopters Inc. (MDHI), Model 369D, 369E, 369F, 369FF, 369H, 369HE, 369HM, 369HS, 500N, and 600N helicopters. This AD was prompted by a report of a spiral crack in the pilot-to-copilot tail rotor torque tube (torque tube). This AD requires a one-time visual and recurring borescope inspections of the torque tube and depending on the results, removing the torque tube from service. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective January 10, 2022.

The Director of the Federal Register approved the incorporation by reference of certain documents listed in this AD as of January 10, 2022.

**ADDRESSES:** For service information identified in this final rule, contact MD Helicopters, Inc., Attn: Customer Support Division, 4555 E. McDowell Rd., Mail Stop M615, Mesa, AZ 85215-9734; telephone (800) 388-3378; fax (480) 346-6813; or at <https://www.mdhelicopters.com>. You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110. Service Information that is incorporated by reference is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0653.

#### **Examining the AD Docket**

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0653; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments

received, and other information. The street address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Payman Soltani, Aerospace Engineer, Airframe Section, Los Angeles ACO Branch, Compliance & Airworthiness Division, FAA, 3960 Paramount Blvd., Lakewood, CA 90712; telephone (562) 627-5313; email [payman.soltani@faa.gov](mailto:payman.soltani@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to MDHI Model 369D, 369E, 369F, 369FF, 369H, 369HE, 369HM, 369HS, 500N, and 600N helicopters, with torque tube part number 369H7531-9/-11/-13, installed. The NPRM published in the Federal Register on August 13, 2021 (86 FR 44652). In the NPRM, the FAA proposed to initially require visually inspecting the torque tube exterior using a flashlight and mirror and borescope inspecting the interface of the torque tube and bushing segments for a crack, elongation, and other damage, which may be indicated by any corrosion, pitting, crazing, dents, dings, displacement of material at the bolt hole edge, or fretting of the hole. Thereafter, the NPRM proposed to require repeating the borescope inspection. If there is a crack, elongation, or other damage, the NPRM proposed to require removing the torque tube from service. The NPRM was prompted by a report of a spiral crack in the torque tube that appears to have originated from a hole where the tail rotor torque tube control fitting attaches to the torque tube on a Model 369FF helicopter. This crack resulted in increased left pedal movement and subsequent reduced directional control pedal authority. Other model helicopters are affected due to design similarity. This condition, if not addressed, could result in failure of the torque tube, loss of tail rotor control, and subsequent loss of control of the helicopter.

### **Discussion of Final Airworthiness Directive**

#### **Comments**

The FAA received no comments on the NPRM or on the determination of the costs.

#### **Conclusion**

The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, this AD is adopted as proposed in the NPRM. The minor editorial changes include updating the cross reference in Note 2 from “paragraph (g)(1)(ii)” to “paragraph (g)(1)(ii) of this AD,” and deleting paragraph “(i) No Reporting Requirement” of the published NPRM because it is unnecessary. As a result of deleting that paragraph, some paragraph identifiers have changed.

### **Related Service Information Under 1 CFR Part 51**

The FAA reviewed MD Helicopters Service Bulletin SB369D-229R2 for Model 369D helicopters, SB369E-129R2 for Model 369E helicopters, SB369F-119R2 for Model 369F and 369FF helicopters, SB369H-263R2 for Model 369H, 369HE, 369HM, and 369HS helicopters, SB500N-066R2 for Model 500N helicopters, and SB600N-080R2 for Model 600N helicopters, each dated March 24, 2021 (co-published as one document and collectively referred to as “Revision 2”). This

service information specifies procedures for a one-time visual inspection and recurring borescope inspections, completing a Service Operation Report, and returning a removed torque tube to an authorized service center or MDHI.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

### **Other Related Service Information**

The FAA also reviewed MD Helicopters Service Bulletin SB369H-263, SB369D-229, SB369E-129, SB369F-119, SB500N-066, and SB600N-080, each dated January 30, 2020 (co-published as one document and collectively referred to as “initial issuance”), and MD Helicopters Service Bulletin SB369H-263R1, SB369D-229R1, SB369E-129R1, SB369F-119R1, SB500N-066R1, and SB600N-080R1, each dated May, 15 2020 (co-published as one document and collectively referred to as “Revision 1”). The initial issuance and Revision 1 of this service information specify the same procedures as Revision 2 of this service information, except Revision 1 clarified the torque value to apply to the nut and Revision 2 deletes Method 2 of the Accomplishment Instructions and adds a recurring 300-hour borescope inspection of the torque tube.

### **Differences Between This AD and the Service Information**

For helicopters that have accumulated 600 or less total hours time-in-service (TIS), Revision 2 of the service information specifies an initial compliance time of during the next 100-hour inspection, whereas this AD requires initial actions within 100 hours TIS after the effective date of this AD instead. For helicopters that have accumulated more than 600 total hours TIS, Revision 2 of the service information specifies an initial compliance time of within 5 hours of flight time, whereas this AD requires initial actions within 5 hours TIS or 30 days after the effective date of this AD, whichever occurs later, instead.

Revision 2 of the service information specifies returning a removed torque tube, whereas this AD requires removing the torque tube from service instead. Revision 2 of the service information specifies completing a Service Operation Report, whereas this AD does not include that requirement.

### **Costs of Compliance**

The FAA estimates that this AD affects 58 helicopters of U.S. Registry. Labor rates are estimated at \$85 per work-hour. Based on these numbers, the FAA estimates the following costs to comply with this AD.

Visually inspecting the torque tube takes a minimal amount of time. Borescope inspecting the torque tube takes about 1 work-hour for an estimated cost of \$85 per helicopter and \$4,930 for the U.S. fleet, per inspection cycle.

If required, replacing the torque tube takes about 5 work-hours and parts cost about \$983 for an estimated cost of \$1,408 per helicopter.

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

### **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with

promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on helicopters identified in this rulemaking action.

## **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:



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**2021-22-11 MD Helicopters Inc. (MDHI):** Amendment 39-21784; Docket No. FAA-2021-0653; Project Identifier AD-2021-00170-R.

**(a) Effective Date**

This airworthiness directive (AD) is effective January 10, 2022.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to MD Helicopters Inc. (MDHI) Model 369D, 369E, 369F, 369FF, 369H, 369HE, 369HM, 369HS, 500N, and 600N helicopters, certificated in any category, with pilot-to-co-pilot tail rotor torque tube (torque tube) part number 369H7531-9/-11/-13, installed.

**(d) Subject**

Joint Aircraft Service Component (JASC) Code: 6720, Tail Rotor Control System.

**(e) Unsafe Condition**

This AD was prompted by a report of a spiral crack in the torque tube. The FAA is issuing this AD to prevent failure of a torque tube. The unsafe condition, if not addressed, could result in loss of tail rotor control and subsequent loss of control of the helicopter.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

(1) Using a flashlight and mirror, visually inspect the exterior of the torque tube at the interface of the torque tube and bushing segments, and borescope inspect the interior of the torque tube at the interface of the torque tube and bushing segments for a crack, elongation, and other damage, which may be indicated by any corrosion, pitting, crazing, dents, dings, displacement of material at the bolt hole edge, or fretting of the hole by following the Accomplishment Instructions, paragraphs 2.A.(1). through (3).(a)., of MD Helicopters Service Bulletin SB369H-263R2, SB369D-229R2, SB369E-129R2, SB369F-119R2, SB500N-066R2, or SB600N-080R2, each dated March 24, 2021, as applicable to your model helicopter, as follows:

Note 1 to the introductory text of paragraph (g)(1): Scaling of the inner diameter primer or paint may be an indication of a crack.

(i) For helicopters that have accumulated 600 or less total hours time-in-service (TIS), within 100 hours TIS after the effective date of this AD.

(ii) For helicopters that have accumulated more than 600 total hours TIS, within 5 hours TIS or 30 days after the effective date of this AD, whichever occurs later. Note 2 to paragraph (g)(1)(ii): It is advised to limit flights with increased, excessive, or rapid pedal movements before the first instance of the actions required by paragraph (g)(1)(ii) of this AD are accomplished.

(iii) If there is a crack, elongation, or other damage, before further flight, remove the torque tube from service.

(2) Thereafter following paragraph (g)(1) of this AD, at intervals not to exceed 300 hours TIS, borescope inspect the interior of the torque tube at the interface of the torque tube and bushing segments as required by paragraph (g)(1) of this AD. If there is a crack, elongation, or other damage, before further flight, remove the torque tube from service.

#### **(h) Credit for Previous Actions**

You may take credit for the instance of the actions required by paragraphs (g)(1)(i) or (ii) of this AD if you performed corresponding actions before the effective date of this AD using MD Helicopters Service Bulletin SB369H-263, SB369D-229, SB369E-129, SB369F-119, SB500N-066, or SB600N-080, each dated January 30, 2020, as applicable to your model helicopter, or MD Helicopters Service Bulletin SB369H-263R1, SB369D-229R1, SB369E-129R1, SB369F-119R1, SB500N-066R1, or SB600N-080R1, each dated May, 15 2020, as applicable to your model helicopter.

#### **(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Los Angeles ACO, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, information may be emailed to: 9-ANM-LAACO-AMOC-REQUESTS@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

#### **(j) Related Information**

(1) For more information about this AD, contact Payman Soltani, Aerospace Engineer, Airframe Section, Los Angeles ACO Branch, Compliance & Airworthiness Division, FAA, 3960 Paramount Blvd., Lakewood, CA 90712; telephone (562) 627-5313; email payman.soltani@faa.gov.

(2) MD Helicopters Service Bulletin SB369H-263, SB369D-229, SB369E-129, SB369F-119, SB500N-066, and SB600N-080, each dated January 30, 2020 (co-published as one document and collectively referred to as “initial issuance”), and MD Helicopters Service Bulletin SB369H-263R1, SB369D-229R1, SB369E-129R1, SB369F-119R1, SB500N-066R1, and SB600N-080R1, each dated May, 15, 2020 (co-published as one document and collectively referred to as “Revision 1”), which are not incorporated by reference, contain additional information about the subject of this AD. This service information is available at the contact information specified in paragraphs (k)(3) and (4) of this AD.

#### **(k) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

- (i) MD Helicopters Service Bulletin SB369D-229R2, dated March 24, 2021.
- (ii) MD Helicopters Service Bulletin SB369E-129R2, dated March 24, 2021.
- (iii) MD Helicopters Service Bulletin SB369F-119R2, dated March 24, 2021.
- (iv) MD Helicopters Service Bulletin SB369H-263R2, dated March 24, 2021.
- (v) MD Helicopters Service Bulletin SB500N-066R2, dated March 24, 2021.
- (vi) MD Helicopters Service Bulletin SB600N-080R2, dated March 24, 2021.

Note 3 to paragraph (k)(2): The service bulletins listed in paragraphs (k)(2)(i) through (vi) of this AD are co-published as one document.

(3) For MD Helicopters service information identified in this AD, contact MD Helicopters, Inc., Attn: Customer Support Division, 4555 E. McDowell Rd., Mail Stop M615, Mesa, AZ 85215-9734; telephone (800) 388-3378; fax (480) 346-6813; or at <https://www.mdhelicopters.com>.

(4) You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on October 14, 2021.

Lance T. Gant,

Director, Compliance & Airworthiness Division, Aircraft Certification Service.

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